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Workshop Report on The Role of Optical Systems and Devices for Security

OPTICAL PROCESSING SYSTEMS FOR ENCRYPTION, SECURITY VERIFICATION, AND ANTICOUNTERFEITING

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Spatial Phase Mask bonded with account number Spatial Phase Mask array e^[M(x,y)] bonded with images (fingerprint & bio-signature, etc.) g(x,y) Image g(x,y) bonded with images (fingerprint & bio-signature, etc.) g(x,y) Magnetic strip may be used to include algorithms to determine the sequence of phase codes to be inspected, PIN, etc. B. Javidi and J.L. Horner, "Optical Pattern Recognition for Validation and Security Verification," Optical Engineering, Vol. 33, no. 6, June 1994.

HIGH SPEED PARALLEL IMAGE ENCRYPTION Light Illumination Input Phase Code Fourier Plane Phase Code Light Illumination Phase Code Fourier Plane Phase Code Light Illumination Image Encrypted Image Light Illumination Image Encrypted Image

P. Refregier and B. Javidi, "Optical Image Encryption Using Input and Fourier Plane Random Phase Encoding," Journal of Optical Letters,

Vol. 20, pp. 767-769, April 1, 1995.

